

DeserTech Innovation Leaders for the GGW

**Project Proposals Booklet
for Investments**

JUNE 2023

Executive Summary Version

The project proposals you'll find in this booklet result from the exciting, intensive, and sometimes tedious work of a unique group of leaders. **This is** the executive summary version. For the full detailed proposals, please connect with the contact person in the proposal/ the UNCCD or DeserTech

[The DeserTech Innovation Leaders](#) cohort from 10 countries in the Sahel desert is comprised of active individuals who are currently operating in the Great Green Wall initiative. The cohort has been working collaboratively from January 2023 until May 2023 in a unique program designed by [DeserTech](#) in partnership with the [Global Mechanism of the UNCCD](#) and the [Great Green Wall Accelerator](#), to assess burning desertification challenges in their country and design innovative projects using technology to tackle those needs.

The cohort dived deep into mapping, identifying, and prioritizing the most burning [challenges](#) of life under the threat of desertification and drought. They spent a week in Israel's Negev desert, to share these challenges with the vibrant DeserTech ecosystem and to learn about new practices and technologies. Together with local entrepreneurs and experts, they assessed their technology needs, and discussed collaboration opportunities to jointly implement adapted solutions in their communities. In collaboration with the DeserTech companies found relevant, the DeserTech Innovation Leaders for the GGW have designed the project proposals you're about to read to ensure the population in their communities not only survives but thrives.

We wish to thank the companies and the cohort for taking part in conceptualizing and writing projects with the aspiration of fighting desertification.

We invite you to directly impact the communities in the sub-Saharan region by promoting, supporting, and investing in these projects and helping make it a reality!

With great respect,

The DeserTech Team:

Sinai Gohar Barak, Head of International Ecosystem Development

Tal Biran Ben-Gal, Director, Strategic Collaborations (Israel Innovation Institute)

Israel Ben-Shitrit, Business Development

The UNCCD Global Mechanism Team:

Sarah Toumi, Donor relations officer

Jeroen Van Dalen, Partnerships Officer

UNCCD's contributions were made possible through support from the governments of Germany through the German Ministry of Economic Cooperation and Development (BMZ) and the Austrian Development Agency (ADA), respectively. These projects are managed by the GM Team, including Dr. Birguy Lamizana, Senior Programme Officer for the Sahel & Cathrine Mutambirwa, Programme Coordinator.

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DeserTech
Climate Technologies Community



**GREAT
GREEN
WALL**



United Nations
Convention to Combat
Desertification

Executive Summaries




אוניברסיטת בן-גוריון בנגב
Ben-Gurion University
of the Negev




Federal Ministry
for Economic Cooperation
and Development


Austrian
Development
Agency




State of Israel
Ministry of Foreign Affairs



1

Transforming the agricultural value chain in the GGW corridor of Ethiopia

Birrama & AKOLogic



This project outlines a partnership between Birrama and AKOLogic to leverage advanced technology to transform the agricultural value chain in Ethiopia.

Location: Ethiopia

Partners: **Birrama** bring a wealth of combined experience and capability to drive the company's mission of revolutionizing the consumption value chain in Ethiopia and beyond.

AKOLogic is a software development company established in early 2019 by agriculturists who used their field expertise, and superior customer service to develop a food supply chain platform. Leveraging a cloud-based platform powered by Microsoft Azure, AKOLogic processes and relays comprehensive agricultural information, considering factors such as growing conditions, environmental data, and cultural considerations. AKOLogic's focus on sustainability and compliance with international standards, including Good Agricultural Practices (GAP).

The Challenge: Agriculture plays a vital role in Ethiopia's economy and development, with approximately 12 million smallholder farming households accounting for an estimated 95 percent of agricultural production and 85 percent of all employment in the country. Smallholder farmers face numerous challenges, including limited access to markets, financing, technology, training, weak climate resilience and sustainability. In emerging economies like Ethiopia, the consumption value chain is often characterized by inefficiencies, inadequate infrastructure, restricted market access, and an abundance of intermediaries, causing escalated costs and diminished quality.

The Solution: The Birrama-AKOLogic project will improve the lives of smallholder farmers by leveraging advanced technology, agronomic expertise, and data-driven insights to create a sustainable, efficient, and transparent supply chain ecosystem. The project will implement an AI-driven agronomic decision support system for smallholder farmers in rural areas of Ethiopia. It will improve digital literacy and access to digital services; establish regional Agri-Hub centers to support farmer cooperatives; and strengthen linkages between smallholder farmers and the market. The pilot aims to see a 15% increase in agricultural productivity and value chain efficiency for smallholder farmers by 2025.

Financing Sought/Use of Funds: The estimated budget for the 18-month pilot is \$2.6 million.

Primary contact: **Selam Wondim**, co-founder, Birrama, selam.wondim@birrama.com

Ron Shani, CEO and founder, AKOLogic, ron@akol.co.il

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Solar cold rooms to the GGW corridor of Chad

Kouran Jabo & Blue Power



This proposal will outline a partnership between Kouran Jabo and Blue Power to bring solar cold room solutions to Chad.

Location: Chad

Partners: [Kouran Jabo](#) is one of Chad's leading solar energy solutions providers. The company aims to provide electricity for low-income, rural households using solar home systems provided through a pay-as-you-go model using IoT technology to allow installment payment. With operations in seven regions of Chad, Kouran Jabo serves over 3000 households and small businesses.

[Blue Power Tech](#) is a well-established energy solutions provider with over 20 years of field experience. The company's portfolio includes off-grid solar systems for over 100 domestic and rural electrification sites across Europe, Cameroon, and Senegal.

The Challenge: Chad's energy supply is facing significant challenges due to the widening gap between projected demand, existing production capacities, and limited investment opportunities. According to the World Food Programme's 2022 report, 1.7 million people in Chad are severely food insecure. The country struggles from a high rate of production loss resulting from inadequate means of preservation in fishing docks, agricultural production areas, and sylvopastoral zones. Addressing these issues will boost the country's energy and food security and improve the lives of millions of people.

The Solution: The pilot introduces portable solar cold rooms in Lake Chad, with a fishing capacity of 144,000 tons per year and in the city of Doba in the south, where nearly 70% of the mangos produced each year are wasted due to lack of storage. By providing a range of storage options with varying capacities, this project will significantly reduce the rate of production loss in Chad.

Financing Sought/Use of Funds: Design, manufacturing and installation of 22 containers will cost a total of 3.15 Million EURO.

Primary contacts:

Ali Mbodou Youssouf, Founder and CEO, Kouran Jabo. yousouf@kouranjabo.com

Eric Gatterer, Project Manager, Blue Energy. ericbluepower@gmail.com

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Rescuing Food: Solar Cold Rooms in Mali

3R & Blue Power



This proposal outlines a partnership between 3R and Blue Power to provide solar storage solutions in Mali.

Location: Lac Debo and Sikasso, Mali

Partners: 3R was founded in 2011 and operates in three regions of Mali. The company specializes in waste management and energy production. It uses innovative technologies to recycle hazardous and non-hazardous household and industrial waste, from which it can produce both raw and finished materials, including electricity.

Blue Power Tech is a well-established energy solutions provider with over 20 years of field experience. The company's portfolio includes off-grid solar systems for over 100 domestic and rural electrification sites across Europe, Cameroon, and Senegal.

The Challenge: Mali's energy supply faces significant challenges due to the widening gap between projected demand, existing production capacities, and limited investment opportunities. The country struggles from a high rate of production loss resulting from inadequate means of food preservation in fishing docks, agricultural production areas, and sylvopastoral zones. Addressing these issues will boost the country's energy and food security and improve the livelihoods of millions of people.

The Solution: The pilot introduces portable solar cold rooms in Lac Debo, with a fishing capacity of 130,000 tons per year and in the city of Sikasso in the south, where nearly 70% of the mangos produced each year are wasted due to lack of storage. By providing a range of storage options with varying capacities, this project will cater to the needs of different sectors and significantly reduce the rate of production loss in Mali.

Financing Sought/Use of Funds: Design, manufacturing and installation of 22 containers will cost a total of 3.15 million EURO.

Primary contacts:

Hamidou Traore, physicist, 3R. traorehamidou@gmail.com

Eric Gatterer, Project Manager, Blue Energy. ericbluepower@gmail.com

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Powering food security in the GGW corridor of Nigeria

Climate Parliament Nigeria Network & Blue Power



This proposal outlines a partnership between Blue Power and Climate Parliament Nigeria Network to create access to clean energy and improve agricultural produce, storage, and preservation in Nigeria.

Location: Nigeria

Partners: **Climate Parliament Nigeria Network** is the Nigerian representative of the Climate Parliament, an international, multi-partisan network of legislators working worldwide to help solve the climate crisis and accelerate the transition to renewable energy. Through the parliament, MPs exercise leadership on issues of climate action, energy access, large-scale renewable energy, green grids, and sustainable transport.

Blue Power Tech is a well-established energy solutions provider with over 20 years of field experience. The company's portfolio includes off-grid solar systems for over 100 domestic and rural electrification sites across Europe, Cameroon, and Senegal.

The Challenge: A significant proportion of the Nigerian population lacks access to clean and consistent power supply due to factors including limited clean and renewable electricity generation, restricted access to the national grid, and continuous energy policy changes. This situation makes it very difficult to deploy smart irrigation systems, access clean water, as well as employ modern agricultural storage and preservation equipment necessary to maintain the agricultural value chain.

The Solution: To address the twin challenges of access to energy and agricultural products storage and preservation, the Blue Power Solar Household System (SHS), along with Save80 environmentally safe stove, will be deployed to supply continual energy to 500 households within 9 out of 11 states in the GGW corridor of Nigeria. Blue Power will also build 9 cold storage facilities in these locations.

Climate Parliament parliamentarians represent communities across Nigeria, will be engaged to ensure seamless reception. Other stakeholders include the local government chairman, Village/district/community head; and youth leaders. Stakeholders will determine the most appropriate sites for the project and influence the acceptance of the project in the various communities. Members of the community will provide security for the projects to ensure it is not vandalized. The community will sign a MOU to ensure the protection of the project.

Financing Sought/Use of Funds: Design, manufacturing and installation of 22 containers will cost a total of 3.44 Million EURO.

Primary contacts: **Ojinnaka Charles**, Deputy National Coordinator of the CPNN. nnajjugbaja@gmail.com; **Eric Gatterer**, Project Manager, Blue Energy. ericbluepower@gmail.com

Off-grid Solar Energy in Nigeria

World Ecological Concepts & Blue Power



This proposal will outline a partnership between World Ecological Concepts and Blue Power to provide off-grid solar energy in Nigeria.

Location: Sabaru Kazaoure in Jigawa State, Nigeria

Partners: [World Ecological Concepts, Ltd.](#) is a global training environmental consulting firm and social enterprise in Nigeria that has been assisting NGOs, governments, communities, and individuals achieve their environmental objectives. They specialize in clean energy, waste management, natural resource protection, and other environmental services.

[Blue Power Tech](#) is a well-established energy solutions provider with over 20 years of field experience. The company's portfolio includes off-grid solar systems for over 100 domestic and rural electrification sites across Europe, Cameroon, and Senegal.

The Challenge: Close to 600 million people (50% of the population) in Sub-Saharan Africa lack access to electricity. In Nigeria, an estimated 84% of households lack access to quality cooking and lighting fuels and 92 million people lack access to power, according to the Energy Progress Report of 2022.

In the Jigawa State in the Great Green Wall corridor, about 90 percent of the population is living in rural communities without access to clean energy or good storage facilities for agricultural produce. The local population of about 200,000 people who are predominantly agrarian and suffering from poor access to clean energy.

The Solution: This project will provide off-grid solar energy for home and school use, as well as power storage facilities for the farmers in communities. The system will be a pay-as-you-go model.

Financing Sought/Use of Funds: The total cost of the project is \$7.9 Million, which includes

Primary contact:

Oluwaseyi Olawuyi, CEO, World Ecological Concepts. worldecologicalconcepts@gmail.com

Eric Gatterer, Project Manager, Blue Energy. ericbluepower@gmail.com

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Rescuing Food: Solar Cold Rooms in Niger

Blue Power Tech & Issoufou Mahamadou Foundation (FIM)



This proposal will outline a partnership between Blue Power Tech and Issoufou Mahamadou Foundation to bring solar cold rooms to Niger.

Location: Tahoua, Niger

Partners: [The Issoufou Mahamadou Foundation \(FIM\)](#) is committed to supporting rural communities in the quest for better living. Their mission is to promote democracy, peace, pan-Africanism, cultural renaissance, develop human capital, and combat climate change. They undertake a mosaic of projects to improve rural electrification conditions, including designing residential and commercial hybrid systems, monitoring systems, maintenance, and pay-as-you-go services.

Blue Power Tech is a well-established energy solutions provider with over 20 years of field experience. The company's portfolio includes off-grid solar systems for over 100 domestic and rural electrification sites across Europe, Cameroon, and Senegal.

The Challenge: Niger's energy supply faces significant challenges due to the growing gap between projected demand, existing generation capacity and limited investment opportunities. This problem is particularly prevalent in agricultural production areas and forest-pastoral areas, where significant losses of fishery, agricultural and dairy products are incurred on a regular basis.

The Solution: The pilot introduces portable solar cold rooms in Tahoua to conserve products. This project will improve income generated by the sale of fish, dairy and gardening products and to create jobs through the application of solar cold technologies for conservation. A diagnosis and in-depth study will be conducted to identify potential beneficiaries. By providing a range of storage options with varying capacities, this project will cater to the particular needs of different sectors and significantly reduce the rate of production loss in Niger.

Community Involvement: The pilot involves effective communication with the municipality and direct beneficiaries. To better understand the challenges faced by the beneficiaries, Blue Power will organize sessions for local fishermen and mango and tomato farmers, as well as civil society organizations and local authorities to educate on the project's processes and potential impact. Following the training sessions, Blue Power will establish a task force to manage the containers and 3R.



Financing Sought/Use of Funds: Design, manufacturing and installation of 22 containers will cost a total of 3.15 Million EURO.

Primary contacts:

Weifane Ibrahim, Executive Secretary, Issoufou Mahamadou Foundation (FIM).

wibrahim@issoufou.foundation

Eric Gatterer, Project Manager, Blue Energy. ericbluepower@gmail.com



Nourishing Palm Trees in Senegal

Reforestation and the Great Green Wall of Senegal, Polaris Agro Tech, Netafim & PolyGreen



This proposal will outline a partnership between Reforestation and the Great Green Wall of Senegal; Polaris Agro Tech and Netafim to water and fertilize palm trees in Senegal.

Location: Diamnadio, Senegal

Partners: Reforestation and the Great Green Wall of Senegal is a governmental agency in charge of implementing the GGW initiative in Senegal and regreening the country.

Polaris Agro Technology is a Senegalese company that develops and implements the structuration of date palm farming with the Senegalese Great Green Wall Agency from the provision of selected trees to the transfer of technology and know-how about farming dates.

Netafim is an Israeli manufacturer of irrigation equipment. The company produces drippers, dripper lines, sprinklers, and micro-emitters. As of 2012, Netafim was the global leader in the fast-expanding market of drip- and micro-irrigation and was the overall largest provider of drip irrigation systems, with a global market share of 30%.

PolyGreen is a chemical company that manufactures Bio-Super Absorbent Polymers (SAP). Biodegradable polymers saturate the soil with moisture, promoting lush plant growth and healthier crops. Biodegradable polymers minimize waste and promote eco-friendly farming practices.

The Challenge: The lack of water access for date palm farming in Senegal is a multidimensional issue. Sometimes water is available, but its salinity and quality might necessitate treatment or a specific irrigation system. Often farmers are not knowledgeable of, or trained in, the practice of automated smart irrigation systems. Another challenge related to the health of the date palm is the most destructive and threatening disease - the bayoud, or vascular fusariosis of the date palm.

The Solution: The pilot will provide a fully autonomous, low-maintenance, cost-effective, precision smart irrigation system to date palm farmers, along with fertilizer and biocontrol for healthier and stronger plants and trees on the Great Green Wall Initiative. The intervention will start in the greenhouse and reach all the way to the date palm fields, The site will be a one-hectare date palm field in Diamnadio, Senegal's new economic and political capital. The pilot will be split between two half-hectare plots, the first one will be monocultural only and the second plot will demonstrate the integrated date palm project.

Financing Sought/Use of Funds:

The total estimated budget is \$70,800, with the final cost available only after the design and agreement of commercial terms. Price does not include transportation, installation, or taxes.



Primary contact: Oumar Abdoulaye Ba, Director, Reforestation and the Great Green Wall of Senegal National. obakura@gmail.com

Jean-Christophe Henry, CEO, Polaris Agro. henry2@alumni.iu.edu

Philippe Diop, CEO, Netafim Senegal. philippediop.bwa@gmail.com

Dan Eliahu, CEO, PolyGreen. dan@polygreen-group.com



Creating buffer zones in the GGW corridor of Mali and Nigeria

Alliance, BETin & GG Biologicals



This proposal outlines a partnership between BETin, Herou Alliance, and GG Biologicals to create buffer zones in the GGW corridor of Mali and Nigeria.

Location: Mali and Nigeria, with R&D center in Ethiopia

Herou Alliance fosters economic, environmental, and social impact for rural and urban women and youth by building an inclusive moringa value chain. They help rural women become effective organic moringa suppliers while contributing to the reforestation of degraded landscapes. The company aims to empower 15,000 farmers and restore 1,000 hectares by planting 10 million moringa trees. Located in Mali.

BETin - Bio and Emerging Technology Institute, formerly known as the Ethiopian Biotechnology Institute (EBTi), works to resolve and address major challenges related to health, food security, and the realization of sustainable development. The institute focuses on world-class research activities in biotechnology and emerging technology which are major pillars for Ethiopia's economic development.

GG Biologicals objective is to develop the network and infrastructure required for the regenerative agriculture market to grow exponentially. Biologicals connects the various solutions found in nature in a strategic and practical manner. They are currently producing full spectrum, universal, liquid bio stimulants and dry microbial amendments that are both effective and affordable. Technical Project Partners include Aorkwagh, Empower with Nature, and the Association for Regenerative Agriculture and Agroforestry in Israel.

The Solution: The collaboration between GG Biologicals and partners from the Sahel Region will create buffer zones to combat desertification. The project focuses on agroforestry, microbiology, bio stimulants, and restoring indigenous flora and fauna. The integrated business model combines soil health, nurseries, research and development, education, land restoration, and agricultural product revenue generation to establish buffer zones that function as economic and educational hubs. This pilot seeks to slow down desertification, address food shortages, create jobs, expand R&D, and foster regenerative agriculture and land restoration. The buffer zones will be designed as literal green walls, with the goal to create buffer zone protocol for the Great Green Wall (GGW) project as a whole.

Financing Sought/Use of Funds: The estimated budget for the 18-month project is \$2 million.

Primary contacts: **Yemisrach Melkie Abebaw**, R&D Institute, BETin. yemisrach.melkie@gmail.com

Rokiatou Traore, Founder and Executive Manager, Herou Alliance. routra7@gmail.com

Sam Bevans, Co-Founder and CEO, GG Biologicals. minoaka333@gmail.com.

Reducing Fire Hazards in Senegal

Centre de Suivi Ecologique (CSE) Ecological Monitoring Center & Climate Eyes



Location: District of Goudiry, located in the Sudanian–Sahelian phytogeographic domain

Partners: **The Centre de Suivi Ecologique** (Ecological Monitoring Center) is a structure of excellence that uses state-of-the-art technology to conduct environmental monitoring and the sustainable management of natural resources based on reliable spatial information. As such, it provides useful information for decision-making, particularly in the management of natural disasters, such as floods, and early warning through the monitoring of vegetation and bushfires.

Climate-Eyes is a startup company developing next-generation collaborative Decision Support Systems (DSS) for climate change, precision agriculture, forestry, carbon, water, and utilities. The company utilizes expertise in satellite-based remote-sensing, ecology, and cloud-based software to provide bespoke DSS for a variety of areas. Climate-Eyes has the expertise, experience, and technology to serve such needs with a SAAS-based, B2B solution.

The Challenge: Most, if not all fires Senegal and other Sahelian countries are man-made. Every year, bushfires cause inestimable damage to natural resources: degradation of the quality of forest; loss of thousands of tons of pasture; destruction of food reserves and natural regeneration; decline in plant and animal biodiversity, etc. (DEFCCS, 2013). The fires effect soil fertility, destruction of human settlements, crops, orchards, food, furniture, clothing, livestock, etc. Fire is affected by vegetation types, structure, and moisture, all of which can be analyzed and monitored by satellite images.

The Solution: The project will reduce bush savanna fires by building a spatial fire risk assessment model, in a cloud-based Decision Support System (DSS). This system will enable stakeholder groups to better understand the pre-fire risk, prepare for plausible fires and improve their ability to combat them.

Financing Sought/Use of Funds: Total costs for Climate-Eyes for the duration of the 24-month project are 372,000 USD.

Primary contact: **Dieynaba Seck**, Project Manager, Centre De Suivi Ecologique, dieynaba.seck@cse.sn

Arie Rosenfeld, Co-Founder, Climate-Eyes, arik@ecolo-gis.com

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Land Restoration and Valorization through Sustainable Climate Smart Agro-Silvo-Pastoral Production

Green Engineering Services (Burkina Faso), Women Initiative (Djibouti), Foundation Mahamadou Issoufou (Niger), Future Team Tchad (Chad) & Netafim



This proposal outlines a partnership between Green Engineering Services, Women Initiative, Foundation Mahamadou Issoufou, Future Team Tchad, and Netafim to address land restoration and valorization through sustainable climate-smart agro-silvo pastoral production.

Location: Burkina Faso, Djibouti, Niger, and Chad

Partners: [Green Engineering Services](#) is an LLC established in Burkina Faso in 2017 to offer affordable energy solutions for productive use (i.e., agro-processing, irrigation, water pumping, etc.). To date the company has sold and installed 46 solar mills, 3 pumping systems, and 2 irrigation sites with 3 more sites underway.

Women Initiative in Djibouti is an effort to empower women farmers and improve food security in the country. The initiative aims to address challenges by promoting sustainable agriculture practices on degraded lands, with focus on training and supporting women farmers to cultivate crops and raise livestock using environmentally friendly practices, and providing access to inputs.

[Future Team Tchad](#) (FTT) is an association whose vision is to see a world with an educated and responsible youth, inspired by a diversified union, and to live together in a society where equality is displayed in all issues to achieve the United Nations SDGs (Sustainable Development Goals). The association is composed of young, ambitious, professional leaders from various fields.

[Mahamadou Foundation's](#) goal is to contribute to peace and to the socio-economic and cultural development of Niger by overcoming these five challenges: Peace, Education, Health, Water and Environment. It seeks to work with other actors to promote a culture of peace and reduce poverty, ignorance, disease, and hunger.

[Netafim](#) is an Israeli manufacturer of irrigation equipment. The company produces drippers, dripper lines, sprinklers, and micro-emitters. As of 2012, Netafim was the global leader in the fast-expanding market of drip- and micro-irrigation and was the overall largest provider of drip irrigation systems, with a global market share of 30%.

Challenge: Most of the world's population growth is projected to happen in Africa, while the continent is the most vulnerable to land degradation and desertification, with around 45% of Africa's land area impacted by desertification and 55% of this area at high or very high risk of further

degradation. Burkina Faso, Djibouti, Niger and Chad are all affected by desertification, and most small-scale farmers have difficulties coping with the impacts of climate change. However, these

countries have immense and untapped potential for groundwater and high availability of degraded land that can be restored.

Solution: According to the Great Green Wall Program, Burkina Faso, Djibouti, Niger, and Chad have respectively 13.3, 0.34, 47.3, and 3 million hectares of restorable land in the identified zone for the GGW. The aim of this project is to restore degraded land for agricultural purposes through the dissemination of best restoration practices; provision of water resources through high-capacity boreholes; and efficient water usage through drip equipment. This pilot project will be implemented in regions with a high potential for groundwater in hopes to showcase a technology and business model adapted to small-scale farmers and cooperatives with small purchasing power.

Financing Sought/Use of Funds: The total project cost is 8 Million EURO for the project's 4-year duration.

Primary contact:

Fahima Mohammed, Head, Women Initiative, fihimamohamedwid@gmail.com

Faissal R. Ouedraogo, Project Coordinator, Green Engineering Services, faissal.ouedraogo@ird.fr

Hassane Moussa Mahamat, Coordinator, Future Team Tchad, hassame90@gmail.com

Ibrahim Weifane, Executive Secretary, Foundation Mahamadou Issoufou, wibrahim@issoufou.foundation

Accessing clean water in the GGW corridor of Chad

Future Team Tchad (FTT) & innovation: Africa (iA)



This proposal outlines a partnership between Future Team Tchad (FTT) and innovation: Africa (iA) to install solar water pumping systems in Chad.

Location: Chad

Partners: **Future Team Chad** (FTT) Future Team Chad (FTT) is a non-profit NGO based in N'djamena that promotes the implementation of the UN SDGs in Chad. FTT interventions involve access to vital resources (water, energy, etc.); youth, culture and sports; social action and volunteering; education, information and training; and more. Since its creation, FTT has signed several memorandums of understanding with governmental institutions and civil society organizations.

Innovation: Africa (iA) is an Israeli NGO that utilizes solar energy, to pump safe and clean water from the aquifer throughout remote villages across 10 African countries. To date, iA has completed over 900 solar and water installations, impacting over 4.2 million people across Uganda, Malawi, Tanzania, Zambia, South Africa, Eswatini, Cameroon, DRC, Ethiopia, and Senegal. Over the next 4 years, iA aims to complete an additional 1,200 projects to impact 10 million people across the continent.

The Challenge: Chad, a landlocked country in Central Africa, faces severe water scarcity issues. According to a report by the United Nations, only 48% of the population in Chad has access to safe drinking water sources and 54% of the population lacks access to basic water services. The situation is particularly dire in the villages surrounding the capital city of N'Djamena, with some residents walking up to 10 kilometers each day to collect water from contaminated sources such as rivers and ponds. Contaminated water sources lead to a high prevalence of waterborne diseases, with diarrhea being the leading cause of death among children under five in Chad.

The Solution: This project will install solar water pumping systems around N'Djamena and provide remote rural communities access to water. To construct these systems, iA will engage local contractors to drill into the aquifer and construct storage tanks that house the solar panels, water tank and the solar pump required to harness the energy from the sun and pump clean groundwater. Distribution points are constructed throughout the village to ensure that all community members. This pilot will undertake a total of 45 projects over the next four years, aimed at positively impacting the lives of more than 135,000 people.

Financing Sought/Use of Funds: The estimated budget for the 4-year project is \$5.5M.

Primary contact: **Hassane Moussa Mahamat**, Coordinator, Future Team Tchad,

hassame90@gmail.com

Hagar Shapiro, Africa Programs Deputy Director, Innovation: Africa, hagar@innoadfrica.org

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Accessing clean water in the GGW corridor of Chad

LEAD Chad & innovation: Africa (iA)



This proposal outlines a partnership between LEAD Chad and innovation: Africa (iA) to install solar water pumping systems in Chad, with a focus on empowering women to improve their lives through easy access to clean water.

Location: Chad

Partners: **LEAD Chad** is an NGO formed in 2006, that specializes in rural development, biodiversity conservation, adaptation to climate change, and restoration of degraded land. It promotes awareness by organizing activities and implementing sustainable development actions by young leaders committed to reducing gender inequalities. LEAD Chad prides itself as a platform for resilient development through advocacy, empowerment, and dissemination of good agricultural practices at the grassroots level.

Innovation: Africa (iA) is an Israeli NGO that utilizes solar energy, to pump safe and clean water from the aquifer throughout remote villages across 10 African countries. To date, iA has completed over 900 solar and water installations, impacting over 4.2 million people across Uganda, Malawi, Tanzania, Zambia, South Africa, Eswatini, Cameroon, DRC, Ethiopia, and Senegal. Over the next 4 years, iA aims to complete an additional 1,200 projects to impact 10 million people across the continent.

Challenge: Chad, a landlocked country in Central Africa, faces severe water scarcity issues. According to a report by the United Nations, only 48% of the population in Chad has access to safe drinking water sources and 54% of the population lacks access to basic water services. The situation is particularly dire in the villages surrounding the capital city of N'Djamena, with some residents walking up to 10 kilometers each day to collect water from contaminated sources such as rivers and ponds. Contaminated water sources lead to a high prevalence of waterborne diseases, with diarrhea being the leading cause of death among children under five in Chad.

Solution: This project will install solar water pumping systems around N'Djamena and provide remote rural communities access to water. To construct these systems, iA will engage local contractors to drill into the aquifer and construct storage tanks that house the solar panels, water tank and the solar pump required to harness the energy from the sun and pump clean groundwater. LEADChad will work with women in the communities to gain access to clean water, to improve agricultural production, income generation, and nutritional intake on the family level. As part of this, improved and certified seeds will be distributed to the farmers in the village with ongoing training and support of the Technical Institute for Agricultural Research. By the end of the fourth year, this project will complete a total of 20 projects, which will impact the lives of over 60,000 people.

Once systems are installed, FFT will provide each community with training sessions in improved agricultural techniques, market gardening techniques, conservation and better use of mineral resources, agroforestry, and planting and maintenance of tree seedling to improve the hot and arid climate. Each community will receive financial and material support to effectively promote and support agricultural development. As an integral part of iA's operational approach, a strong connection will be established with the village leadership to foster collaboration.

Financing Sought/Use of Funds: The estimated budget for the 4-year project is \$5.4 million.

Primary contacts:

Colette Benoudji, Founder, LEAD Chad, colette_issa@yahoo.fr

Hagar Shapiro, Africa Programs Deputy Director, Innovation: Africa, hagar@innoafrica.org

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Reducing Flood Risk in Niger & Nigeria

Executive Secretariat of the National Council of Environment for Sustainable Development (SE/CNEDD) and Centre for Renewable Energy and Action on Climate Change (CREACC-NG) & Climate-Eyes



This proposal will outline a partnership between CNEDD and CREACC-NG and Climate-Eyes to address surface water management in Niger and Nigeria

Location: North of the town of Kibiya in the state of Kano, in the northern part of the LGA Tundun Wada and the southern part of the LGA of Kibiya and around the city of Damagaram Takaya in Niger.

Partners: [National Council of Environment for Sustainable Development \(SE/CNEDD\)](#) and [Centre for Renewable Energy and Action on Climate Change \(CREACC-NG\)](#) CNEDD is the national body in Niger for the coordination and monitoring of activities relating to the post-Rio conventions including the UNFCCC, UNCBD, UNCCD, and their protocols as well as any other convention that it may subscribe to in this area.

CREACC-NG has United Nations Consultative Status, and is an Observer at the Green Climate Fund. The purpose of CREACC-NG is to reach underserved, hard-to-reach, isolated farmers using agricultural technology, and provide access to quality farm produce and improve economic conditions for women.

Climate-Eyes is a startup company developing next-generation collaborative Decision Support Systems (DSS) for climate changes, precision agriculture, forestry, carbon, water, and utilities. The company combines proven expertise in satellite-based remote-sensing, ecology, and cloud-based software to provide bespoke DSS for a variety of areas.

The Challenge: Water scarcity and rainfall variability are serious threats to the populations of Niger and Nigeria, diminishing agricultural development of the region. Local communities use traditional practices to collect rainwater from tributaries but lack the tools necessary to collect thousands of cubic meters of flood water each year. This leads to land degradation and food insecurity due to soil erosion.

The Solution: The pilot will implement practices of rainwater harvesting and reduce flooding and soil erosion by building hydrological elements such as small dams in creeks. Through a cloud-based SAAS Decision Support System, Climate-Eyes will help relevant government parties and other stakeholders plan and build small hydrological elements to control the flow of water during floods using available local resources and workforce.

Financing Sought/Use of Funds: The budget for 12-14 month duration totals \$480,000. \$280K for personnel, including managers, research leaders, and system architects, as well as GIS and remote

sensing technologists, ecologists, planners, and system engineers. Hydrological elements construction will cost \$100K in both Nigeria and Niger.

Primary contacts:

Oumarou Hassane Executive Secretariat, National Council Of Environment For Sustainable Development, maitoura@yahoo.fr

Usman Muhammad , Executive Director/Projects Director and a Board Member, Centre for Renewable Energy and Action on Climate Change, usmanm@creaccng.org

Arie Rosenfeld, Co-Founder, Climate-Eyes, arik@ecolo-gis.com

Combating Post-Harvest Losses in the GGW Corridor of Nigeria

Centre for Renewable Energy and Action on Climate Change (CREACC) & Natural Offset Farming (NOF)



This proposal outlines a partnership between Natural Offset Farming Ltd. (NOF) and the Centre for Renewable Energy and Action on Climate Change (CREACC) to bring cooling technology to offset post-harvest losses in Nigeria.

Location: Northern Nigeria

Partners: **The Center for Renewable Energy and Action on Climate Change (CREACC)** is an NGO dedicated to and engaged in extensive multi-faceted climate-related activities that seek to bridge energy poverty and improve access to basic livelihoods in hard-to-reach and underserved rural communities across Nigeria.

Nof - Natural Offset Farming is an Israeli start-up that developed advanced cooling technology, focused on the field of CO₂ utilization and decarbonization. The company developed a patented model that utilizes CO₂ to provide a “cooling-as-service” value model for the farmer. Cooling is essential for economic development, yield productivity and food security, and has significant climate impacts.

The Challenge: Post-harvest losses are a tremendous challenge facing small farmers in Northern Nigeria. Statistically, post-harvest losses can reach up to 70%-80% in this geographic area, and harm both the quantity and quality of food production. These losses are detrimental to the farmer, community, and well-being of rural environments across Nigeria. Post-harvest losses account for 8%-10% of greenhouse gas emissions and Northern Nigeria is home to large cement producers who are large emitters of CO₂.

The Solution: The pilot will make use of stackable boxes/cartons for post-harvest utilization and cooled by NOF cooling technology. The desired result of the pilot is to develop a method to effectively reduce food waste by cooling and storing the fruit/vegetable/flower properly for the desired time. The target end-user is the farmer, and the pilot will work in cooperation with the farmer to give him tools to maximize crop yield and break out of the cycle of poverty. Given that the technology captures CO₂, it can potentially jump-start a carbon economy that can benefit Nigeria and Western Africa.

Financing Sought/Use of Funds: The overall expected budget for this multisite project is: \$25,000 - \$30,000.

Primary contacts:

Yoni Ben Zaken, VP of Business Development, NOF - Natural Offset Farming, yonib@nofcooling.com

Usman Muhammad, Executive Director/Projects Director and a Board Member, Centre for Renewable Energy and Action on Climate Change, usmanm@creaccng.org

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Community-based sustainable land restoration in Mali and Nigeria

Drylands Initiative for Ecosystem Restoration and Capacity Building (DINERCAB), Herou Alliance & Tal-Ya



Location: Mali and Nigeria

Partners: Located in Mali, **Herou Alliance** fosters economic, environmental, and social impact for rural and urban women and youth by building an inclusive moringa value chain. They help rural women become effective organic moringa suppliers while contributing to the reforestation of degraded landscapes. The company aims to empower 15,000 farmers and restore 1,000 hectares by planting 10 million moringa trees.

Tal-Ya brings the world a new earth-friendly agritech solution that enhances naturally occurring processes in plants, while addressing water shortage, extreme weather conditions, overuse of chemicals, and soil degradation. Tal-Ya, which means Heavenly Dew, is on a mission to make current agricultural practices more sustainable and resilient to provide food security for the growing global population. Tal-Ya's Mitra teams up with nature to enhance plant growth, produce high-quality yield, and limit the use of resources and substances that affect soil fertility in the long term.

Drylands Initiative for Ecosystem Restoration and Capacity Building (DINERCAB) is a Nigerian NGO with an environmental focus. The organization is building community resilience to combat the negative effects of desertification, drought, climate change, and other environmental challenges plaguing the Drylands of Sub-Saharan Africa.

The Challenge: The progression of desertification and deforestation in Mali and Nigeria keeps rural communities in poverty. Trees play a significant role in biodiversity: they filter air; refresh and filter groundwater; provide shelter and food; stabilize soil; prevent erosion, floods, and chemical flow into water sources. Trees are a natural vegetation cover and windbreakers that diminish the impact of strong winds that may damage crops and erode soil. Farmers, NGOs and governments are facing difficulty in addressing the challenges caused by the high mortality rate of young trees, water scarcity, deteriorating soil health, and soil erosion.

The Solution: The pilot's goals are to stop the progression of desertification and deforestation in Mali and Nigeria via an inclusive value chain around moringa and other trees. The pilot will demonstrate the impact of the Tal-Ya's patented polypropylene Mitra system on 400,000 young trees. The Mitras will help smallholder farmers (SHFs) address climate change challenges and shift from survival mode to a more stable lifestyle. Tal-Ya's Mitra is a 3D platform that provides soil cover, and a productive and supportive environment for young trees and plants. Each unit has a 10-year lifespan, allowing farmers to use each Mitra for several cycles. After 10 years, the Mitras are 100% recyclable.

Financing Sought/Use of Funds: The pilot will cost 403,600, which includes the delivery of 400K trees (200K to each country), and 40K Mitras, establishing drip irrigation and pumping station, drying center, and fruit storage facility.

Primary contacts: **Rokiatou Traore**, CEO, Herou Alliance, routra7@gmail.com

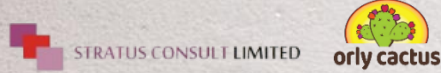
Mikail Haruna Daya, Founder, DINERCAB, mikaildaya@gmail.com

Oded Distel, CEO, Tal-Ya, oded.distel@tal-ya.com

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Nopal Cactus Plantation: Soil Rescue Mechanism in GGW

Stratus Consult Limited (Stratus) & Orly Cactus Farm



This proposal will outline a partnership between Stratus and Orly Cactus Farm to establish a nopal cactus plantation as a soil rescue mechanism for the GGW land regeneration and carbon sequestration program.

Location: Yobe State, Nigeria

Partners: **Stratus Consult Limited** specializes in developing, planning, and implementing greener business concepts to address climate change challenges through cutting-edge technological solutions. Status is partners with the Federal Ministry of Environment – Department Climate Change, National Agency for the Great Green Wall (NAGGW), and the Federal Ministry of Industry, Trade and Investment, and the company renders consultancy support services on carbon sequestration to the Federal Ministry of Finance (Minister's Office) and the Ministry of Niger Delta Affairs.

Orly Cactus Farm was established in 1991 and has been active to date for over 30 years. The farm has several varieties of prickly pear in different colors, including white, yellow, orange, red, purple, and pink. The farm is an organic farm and does not fertilize or spray. The Orly Cactus Farm sits in the Israeli desert area that sees little rainfall.

Challenge: Nigeria has the lowest access to electricity globally, with over 97 million people lacking access to power. Another challenge facing Nigeria is access to water. Many Nigerian are constantly seeking alternative means to access water for their household, farming and livestock, while ravaged by drought, desertification, deforestation, and conflicts. These challenges cause the displacement of people, loss of livelihood and deaths. Women and children are most affected by these issues.

Solution: The nopal (optunia) cactus, originally found in Mexico, has the potential to miraculously address environmental challenges such as drought and desertification, food security, energy gap across regions and support the growth of livelihoods. This project will plant the nopal cactus across the Yobe State of Nigeria (one of the frontline states of the GGW) and the target users will be the people and local communities living in the area. The nopal cactus will become one of the most important crops to produce bioenergy in arid areas where no other plant can thrive. The desired result of the pilot is to deliver proof of concept and develop the carbon methodology for the Nopal Cactus as well as promote out-grower farmers programs through training and capacity building in the communities where the projects will be located.

Financing Sought/Use of Funds: The budget needed to achieve the desired goals of the pilot is the sum four million, four hundred and eighty-five thousand dollars (US\$5,775,000.00 at \$3.85 per cladodes).

Primary contact: **Prince Xavier Eyamba**, Managing Director, Stratus Consult Limited, xavier@stratus-consult.com; Roy Bloom, Founder, Orly Farm, roy@ocf.co.il